



King's Research Portal

Document Version

Publisher's PDF, also known as Version of record

[Link to publication record in King's Research Portal](#)

Citation for published version (APA):

Marris, C., & Joly, P-B. (1999). Between consensus and citizens: public participation in technological assessment in France. *Science Studies*, 12(2), 3-32. [N/A].
<http://www.sciencetechnologystudies.org/v12n2/Marris>

Citing this paper

Please note that where the full-text provided on King's Research Portal is the Author Accepted Manuscript or Post-Print version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version for pagination, volume/issue, and date of publication details. And where the final published version is provided on the Research Portal, if citing you are again advised to check the publisher's website for any subsequent corrections.

General rights

Copyright and moral rights for the publications made accessible in the Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognize and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the Research Portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the Research Portal

Take down policy

If you believe that this document breaches copyright please contact librarypure@kcl.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.

Between Consensus and Citizens: **Public Participation in Technology Assessment in France**

Claire Marris and Pierre-Benoît Joly

France is often regarded as the typical example of technocratic governance, where decisions about science and technology are made by a political and engineering elite, without public consultation. Yet in 1998 a Citizens' Conference was held in France, based on the model of Consensus Conferences developed in Denmark to encourage public participation in technology assessment. This paper will argue that although this event signalled a turning point in the relationship between French institutions and the public with regard to science and technology issues, the implementation of the conference clearly reflected the traditional dimensions of French technocracy.

Consensus conferences are a model for participatory technology assessment developed and promoted by the Danish Board of Technology (DBT, 1999; Joss and Durant, 1995). A group of approximately 15 ordinary citizens are selected and given information on the subject at stake during two preparatory weekends.

At the end of the second weekend the citizen panel elaborates a set of questions and selects the experts they want to consult. A third weekend constitutes the "conference" itself, when the panel cross-examines the experts in front of an invited public audience, usually composed of media and interested parties. According to Grundahl, one of the protagonists of the model, the aim is "to create an enlightened dialogue between expert and lay panel – on the lay panel's premises" (Grundahl, 1995: 31). After two days of debate, the panel retires for approximately 24 hours to write a report with their conclusions and recommendations. These are submitted to parliament and reported in the media. A management committee defines the subject of the conference, co-ordinates the selection of the panel, chooses the persons who will participate in the preparatory sessions, and provides the panel with a list of experts to choose from. The first consensus conference was held in Denmark in 1987 and another 17 have been

held in that country since then. The model has been taken up in a number of other countries, and at least 19 consensus conferences have taken place outside Denmark by the end of 1999 (see Table 1).

Most analyses of these events have been conducted by researchers and practitioners closely involved with the organisation and promotion of consensus conferences, and has focused essentially on practical considerations (e.g. Joss and Durant, 1995). Critics have focused on two dimensions: the link with policy making and the legitimacy of different kinds of knowledge. For example Purdue, in his analysis of the UK consensus conference on plant biotechnology held in 1994, raised the following crucial questions: "Who is consulted? Who participates? Who decides who is consulted and who participates? Who decides what the issues are that people shall be consulted on? What counts as relevant knowledge and expertise? Is anyone obligated to pay attention to the consultation, or is the simple process of staging a consultation considered sufficient?" (Purdue, 1995: 170). Purdue and others have argued that the model itself, and certainly the way in which it was applied in the UK, reinforces the distinction between "expert" and "lay" knowledge (Barns, 1995; Fixal, 1997; Levidow, 1998; Purdue, 1995 and 1996). These authors conclude that, in contradiction with the stated aims of the procedure, consensus conferences tend to de-legitimise non-scientific discourse. The model is promoted in Denmark as a method to open up the decision process to a greater variety of world-views. Critics, on the other hand, argue that consensus conferences have been used to promote a science-

based definition of the decisions at stake in the wider social sphere, especially when the Danish protocol has been exported unaltered to other societal contexts. Levidow (1998) developed this critique by stating that instead of "democratizing technology", the UK consensus conference represented an attempt to "technologize democracy". We shall see that this critique is relevant to the French experience.

Consensus Conferences on Genetically Modified Food

It is interesting to note that a very high proportion of consensus conferences held around the world have related to genetics, and in particular to the use of genetic technologies in food and agriculture (see Table 1). It is also noticeable that this has almost always been the topic chosen for the first conference held in a country. Overall 12 out of the 19 conferences held outside Denmark have been about genetic technologies, and most of these (10) have been about the use of GMOs in food and agriculture. Indeed the very first conference in Denmark was also on gene technology and 4 others have been held on related subjects in that country. It is also particularly striking to see how consensus conferences on the theme of genetically modified food have proliferated throughout the world between 1996 and 1999. In this period, consensus conferences about GM food were held in 8 new countries. In each case it was the first time that they were experimenting with the procedure, or indeed with any form of participatory technology assessment¹. The UK also chose this topic for its first consensus conference, slightly earlier, in

1994. Why was there such sudden enthusiasm in these countries for public participation in technology assessment? And why was the topic of genetically modified food so prevalent?

One explanation is that new developments in genetics since the early 1980s pose new ethical and social questions which provide good subjects for societal deliberation and citizen participation in decision making. They are typical examples of "science meets society" problems. This was indeed recognised by the Danish Board of Technology when it chose the subject for their first consensus conference, which was "gene technology in industry and agriculture". This was, however, at a time (1987) when ge-

netic technologies were still at an early stage of development, and choices about the possibilities and consequences of technological development were still, to some extent, open-ended. The context surrounding genetically modified food in 1996 was very different. Research conducted specifically with the aim of producing agricultural crops had been conducted in laboratories since at least 1983, which was when the first genetically modified plant was produced; and 1996 was the first year when genetically modified crops were produced on a large-scale and arrived on the world market (mostly soya, maize and cotton grown in the USA). Thus, these recent consensus conferences on GMOs were

Table 1: Consensus conferences conducted outside Denmark²

Year	Country	Subject
1993	Netherlands	Genetic modification of animals
1994	United Kingdom	Plant biotechnology
1995	Netherlands	Human genetics research
1996	Netherlands	Management of nature reserves
1996	New Zealand	Plant biotechnology
1996	Norway	Genetically modified food
1997	Austria	Ozone pollution by car traffic
1997	United States	Telecommunications and democracy
1998	France	GMOs in agriculture and food
1998	Japan	Gene therapy
1998	Korea	Genetically modified food
1998	Switzerland	Electricity production
1999	Australia	Genetically modified food
1999	Canada	Food Biotechnology
1999	Switzerland	Genetic engineering and food
1999	New Zealand	Biotechnological pest control
1999	Korea	Cloning
1999	Japan	High information society
1999	United Kingdom	Disposal of nuclear waste

Source: The Loka Institute (<http://www.loka.org/pages/worldpanels.html>)

held *after* key technological and commercial decisions had already been taken and citizens were faced with the products of the technology, literally, on their plates. This seems rather different from the original aim of such conferences, as promoted by the Danish Board of Technology, which was to give lay people the opportunity to assess the potential impacts of technological developments before they are finalised.

Social science researchers have observed that public agencies tend to encourage novel forms of collective management only when faced with problems which can no longer be dealt with by scientific expertise alone. According to Lascoumes (1996), this is particularly and increasingly the case with regard to environmental and health issues which are cross-sectorial and involve a complex mix of institutions. For Lascoumes, in these sectors

the entanglement of different stakes, the cross-sector nature of programmes, the horizontal dimension of public action, and the heterogeneity of the actors concerned have become an enduring feature, including in domains where compartmentalisation, monopolies by a *grand corps*³ and a hierarchical administration system were the rule until now. (Lascoumes, 1996: 330).

This, indeed, describes rather accurately the situation surrounding genetically modified food in the late 1990s. Unlike other major technological innovations (e.g. nuclear power), food production and distribution involves numerous and diverse actors throughout the food chain: farmers, seed companies, food manufacturers and distributors, biotechnology firms, research scientists etc.

Each of these groups have their own vested interests and their own specific relationship with citizens and consumers. Agricultural policy is also a key and visible feature of government policy which can affect voting behaviour and farmer protest movements. Furthermore, food products are something that citizens are in contact with everyday and about which they have some – relative – direct choice. Citizens have therefore been able to influence decisions about GM food through their behaviour as consumers and voters as well as through their role as environmental activists. In addition, debates about the risks associated with GMOs have revolved around issues of uncertainty, ecological uncertainty, and the potential for long term and irreversible harmful effects (Stirling, 1999). For all these reasons, previously established institutional procedures for the introduction of technological innovations into the socio-economic sphere failed to function smoothly for agricultural GMOs. By 1997 the introduction of GMOs into the French, European, and other markets was seriously compromised: environmental and consumers non-governmental organisations had launched active and largely successful public campaigns against GMOs; regulatory policy on GMOs was in total disarray; and food manufacturers and distributors were promising their clients that they would not use GM products even when they were authorised (Levidow, 1999; Marris, 2000a and b). It therefore became clear that new forms of decision-making needed to be explored, and that these would have to incorporate a wider range of stakeholders.

The proliferation of consensus conferences about agricultural GMOs dur-

ing 1996–1999 in countries which had not shown much interest in participative technology assessment does not, therefore, necessarily reflect a sudden worldwide enthusiasm from public policy makers for citizen input into decision-making on science and technology issues. Instead, it suggests that consensus conferences have been used in those countries as a tool to address public controversies that could not be resolved using established institutional processes. It seems that they have been seen by public institutions as a way to resolve existing conflicts and to extricate themselves from difficult political and economic impasses, rather than as a method to promote an early public debate about societal choices for the future trajectory of agricultural biotechnologies. Furthermore, consensus conferences became suddenly popular especially in countries where there had been very little public debate about GMOs prior to 1996, and were promoted only when a public controversy became apparent. Indeed, even the conference on GMOs held in Denmark in 1987 occurred following a public debate initiated by non-governmental organisations. As we shall see, all of these points are particularly relevant in the French context.

French Policy on Agricultural GMOs: an Impasse Is Reached

By the summer of 1997, French public policy on agricultural GMOs was in total disarray and this had important economic and political implications (Marris, 2000a). This surprised many stakeholders, because until 1996 all potential conflict seemed to have been resolved, in France, through the construc-

tion of an apparently effective “science-based” regulatory system (Gotweiss, 1998; Roy, 2000; Roy and Joly, 2000). In contrast to some other European countries, notably Denmark, Germany, and the Netherlands, public policy was broadly supportive toward the development of agricultural biotechnologies; the media showed very little interest in the topic; there were no significant campaigns by French non-governmental organisations (NGOs) representing environmental or consumer interests; no debate in agricultural circles; and no visible controversy among scientists about the risks associated with GMOs. Thus France was, until 1997, the European Union (EU) Member State favoured by applicants for both experimental and commercial releases of GMOs into the environment.

Given this seemingly positive background and well-structured regulatory system, Ciba-Geigy (which later fused with Sandoz to become Novartis) chose France as the gateway for their first application to market a GMO in the EU. In 1994, this biotechnology company submitted an application for an insect- and herbicide-resistant genetically modified maize variety, referred to as “Bt176”. The French authorities supported the application and forwarded it to other EU Member States, following the rules laid down by EU legislation (CEC, 1990). Seven members raised objections to this proposal and this led to lengthy protracted negotiations between the European Commission and the European Council, including referral of the case to three European level expert committees. But these failed to resolve the conflict. In the end, at a European Council of Environmental Ministers held in June 1996,

France was the *only* Member State to vote in favour of the proposal (13 voted against and one abstained). Despite this opposition, the European Commission still decided, in accordance with EU legislation, to authorise the commercialisation of Bt176 maize in December 1996. Once the Commission had given its approval France, as the original notifier for the proposal, was expected to ratify this decision by national law. However, totally unexpectedly, the French Government decided in February 1997 to authorise the commercialisation of Bt 176 maize *but not its cultivation in France* (Marris, 2000a). This decision meant that the commercial release, i.e. import, sale and consumption, of the maize was authorised throughout the EU, including France, but that cultivation was prohibited in France. It was criticised from all sides as being incoherent: by environmental and consumer NGOs; farmers unions; other professional agricultural institutions; and agro-food, seed and biotechnology companies. The next day Axel Khan resigned. He had been Chair of the *Commission du Génie Biomoléculaire* (CGB), the expert committee which had evaluated and supported the application, since its inception in 1986. This signalled an important breach in the relationship between experts and public decision-makers, which had until then followed a linear model founded on delegation of responsibility from politicians to experts (Roy, 2000; Roy and Joly, 2000).

The Government Decides to Launch a Public Debate on GMOs

In May 1997, parliamentary elections were held and the Government changed

from centre-right to left-green. In November 1997, following consultations with major stakeholders, in particular environmental NGOs, the new Government announced its policy line on GMOs. It had decided that "in order to relieve the incoherence of the previous Government" it would authorise the cultivation of Bt176 maize in France (Ministry of Agriculture, 1997). Within the same press release, the Government also announced that it would "launch a public debate" on GMOs, using the Danish model of consensus conferences. In the meantime, "until scientific studies demonstrate the absence of risk for the environment and until this public debate is completed", no further authorisations for genetically modified plants other than maize would be approved. At the same time, the Government also announced a number of measures related to the regulation of GMOs: a new expert committee for "biovigilance" would be created to follow the environmental and health impacts of the commercial cultivation of Bt176 maize in France; the expert committee responsible for the evaluation of risks associated with the release for GMOs into the environment, the CGB, would be reformed, in particular to make it more open to consumer and environmental NGOs; and "consumer information would be assured through precise labelling". In practice, this simply meant that existing legislation would be applied: GMOs would be labelled, as would products containing GMOs – but only if they were not considered to be "identical" to traditional products (i.e. "substantially equivalent", as defined by EU legislation).

These declarations demonstrated that the Government perceived GMOs as a

source of political controversy and that it was determined to be seen to be seriously addressing key issues in the public debate. The numerous measures announced simultaneously at this press conference were clearly intended to set out an innovative trend in public policy on GMOs. This strategy appeared to fail, however, since it was the decision to authorise the cultivation of the Novartis Bt176 genetically modified maize which was perceived by industry and NGOs alike as the strongest statement with regard to governmental policy on GMOs. This was also the main feature which was discussed in the press (Lemarié *et al.*, 2000).

At the time of the announcement, the stakes were high for the Government because it had to make important and urgent decisions about pending applications for EU level commercialisation of other GMOs. As mentioned above, most EU level applications for marketing of GMOs prior to 1996 were submitted in France. In 1997-98, several of these were accepted by the European Commission but, as a final step in the legislative procedure, had to be ratified by France. By not processing the appropriate decrees, France was blocking the import of these GM lines in the whole of the EU. The pressure from the European Commission to ratify these authorisations was high, as was the political and economic pressure from the United States with regard to the importation of genetically modified products into the EU (see for example Schumacher, 1998). The possibility that the USA might complain to the World Trade Organisation (WTO) about the EU refusal to import GMOs was also very much in the minds of government officials, especially given the ongoing

WTO involvement in controversies at that time about bananas from ex-European colonies and American hormone-treated beef from the USA. However, despite much corridor speculation, to date no complaint has been lodged by the USA at the WTO regarding the import of GMOs into the EU.

The reputation of the new Government as a whole was also threatened, and in particular the viability of the fragile left-green coalition, since the Green party had clearly declared itself against GMOs prior to the elections (the new Minister of Environment, Dominique Voynet, was the head of the Green party). In order to demonstrate unanimity, the November 1997 announcement was made at a press conference which brought together an unusually broad spectrum of senior government representatives: the Prime Minister, three Ministers (Agriculture, Environment and Health), and the Secretary of State for Consumer Affairs. Controversy about the role of the Greens in this decision was, however, not avoided: it was challenged immediately from within the party.

In this difficult international context, the consensus conference provided the Government with a way to legitimately delay immediate action, while at the same time promising that decisions would be taken as soon as the public debate was completed (Joly, 2000). The conference was also expected to reveal to the US administration that public opinion in France was truly different to that in the USA, and therefore that the French Government's reluctance to allow US imports of GMOs was not due to economic protectionism. On the other hand, this resulted in a very tight time-

schedule for the consensus conference: the Government promised that the consultation exercise would be completed before July 1998, fearing that the USA would not be prepared to wait any longer than that. Thus, the conference was organised in just six months, whereas approximately 12 months are generally considered necessary by the Danish Board of Technology. This also meant that the conference had to be held in June, during the final frenzy of the Football World Cup which was in France that year and just as the majority of the French population was about to depart on extended summer holidays. This unfortunate timing was latched upon by NGO critics. To make things worse, in terms of media attention to the conference, the French team unexpectedly made it all the way to the final and won the Cup.

It was in this policy context that the idea of a consensus conference emerged on the public scene in France, and this obviously influenced the reactions of all stakeholders. The Government was criticised from all sides for organising a public debate *after* it had already taken a key decision in favour of the technology. Many environmental and consumer NGOs made this point in public. For example, a document produced by the non-governmental organisation *Agir pour l'Environnement* in collaboration with seven other environmental, farmer and consumer pressure groups (including Greenpeace, Ecoropa and the *Confédération Paysannes*) stated that:

By announcing simultaneously the start of a public debate on GMOs ... and the authorisation to cultivate the first GM maize, the French Government has adopted an unacceptable strategy of

fait accompli. It implies that public consultation is simply an accompanying measure which aims to make acceptable a decision which has already been pronounced upon. ("GMO warning!", undated document, approximately March 1998).

Social science researchers and key actors interested in public participation in technology assessment also published commentaries insisting on this point (Assouline, 1998; Legrand, 1998). Industry representatives also felt that the timing jeopardised the validity of the consensus conference but did not express this view in public.

The Government View of the Consensus Conference

A small group of high-ranking civil servants were behind this initiative, from the ministries of Agriculture and Environment, and from the Prime Ministers' office. They perceived the consensus conference as a convenient tool to help the Government out of a difficult political and economic impasse created by public opposition to genetically modified food products. It would help to demonstrate that the Government took the views of the public seriously. At the same time, the structured and *prêt-à-porter* dimension of the model was attractive. They felt reassured that previous experiences in other countries demonstrated that the debate would not get out of hand. Rather, the conference would reestablish the legitimate role of government in a field that had until then been delegated to experts and "invaded" by NGOs. The press release from the Prime Minister's office described the process as follows:

Public opinion remains undecided and seems insufficiently informed. While our co-citizens are ready to accept the use of genetic modification for the production of medicines, they are reticent to accept it for their food. Despite the great scientific experience in the field of genetic engineering, citizens refuse that decisions that entail the future be taken without the expression and confrontation of all opinions. (...) [consensus conferences are] a form of participatory debate between citizens and experts on questions associated with scientific and technological development. They aim to reintegrate citizens into the heart of the debate by creating favourable conditions for a dialogue that allows an understanding of the complexities of the stakes, the emergence of possible points of agreement and disagreement, and of uncertainties. (Prime Minister's Office, 1997)

In the quote, it is unclear who is supposed to understand the complexities, and who is supposed to agree or disagree with whom. Throughout the press releases, the only people mentioned as actors in the process are the citizen panel and the invited experts (and the steering committee). Furthermore, although consensus conferences were referred to by the Government as a "new way of elaborating decisions" and as a means to implement "participatory democracy" (Ministry of Agriculture, 1997), no statement was made about the link between the conference and the decision making process. Indeed, the precise link between parliamentary decision-making and consensus conferences remains a moot point for this method of participatory technology assessment (see Joss, 1998, for an analysis of this link in Denmark). In the French case, the Government press releases focused on "debate" "information" and "dialogue"

between experts and citizens. The omission of any statement about the link between the conference and decision-making was particularly striking because, unlike other consensus conferences elsewhere in the world (e.g. in the UK in 1994), in this case it was the Government itself which was clearly and explicitly the instigator of the whole process. Thus the press releases stated that: "The Government has decided to launch a public debate on GMOs", but made absolutely no reference to what the Government intended to do with the recommendations of the citizen panel. The statements regarding the outcome of the process focused solely on the production of the lay panel's report and its take up by the press. Indeed, apart from these two press releases issued in November 1997, the Government made no further public statements about the consensus conference process itself, and never explicitly responded to the panel's recommendations. It very consciously adopted an arm's length attitude and delegated the running of the conference to the *Office Parlementaire de l'Evaluation des Choix Scientifiques et Technologiques* (OPECST), claiming that this institution had the necessary strong legitimacy and credibility, based upon its independence and neutrality (Ministry of Agriculture, 1997).

By asking the OPECST to organise the conference, the Government intended to make a clear distinction between the executive and parliamentary arms of the political system. Thus, although Government ministers clearly took the decision that the conference should take place and announced this in their November press conference, they then took no responsibility for the process or the out-

come. It was to be organised independently from them, and would report solely to parliament. The official decision to ask the OPECST to organise the conference was taken by the lower house of parliament on 3rd December 1997. On its side, the OPECST was also very keen to emphasise its independence from the political system. The Office insisted, as a condition for taking on the running of the conference, that the Government should have no influence on the process, including for example the choice of members of the steering committee and of the persons who would take part in the preparatory weekends. This independence suited both parties very well, but meant that the link between the conference and decision-making was weakened.

The OPECST View of the Conference

The OPECST was set up in 1983 as a parliamentary office which follows model of the (now defunct) USA Office of Technology Assessment, but on a much smaller scale. It is similar to other European parliamentary offices for technology assessment, including the Danish Technology Board. It is however interesting to note the use of the word "choice", rather than "assessment", in its title. It is a non-partisan parliamentary advisory body, composed in equal parts of members of the upper and lower houses of parliament (16 of each), and with equal representation from right and left wing parties, regardless of the composition of parliament at the time. A representative from the Green Party was included for the first time in 1998. The mission of the OPECST is to "inform parliament on the consequences of its choices which have a sci-

entific or technological dimension in order to enlighten its decisions" (OPECST, 2000). The Office puts great emphasis on the fact that it is totally independent from government and its civil service departments. Either chamber can submit topics to the office for investigation. A rapporteur is chosen among the members of the office, who conducts the study and submits his report for approval to the members of the Office. The principal method for technology assessment employed by the OPECST consists of private auditions of experts. In addition, it has developed a model for "Public Auditions" which involves cross-examination of experts in front of an invited audience of journalists.

In May 1996, the socialist group in parliament (then in opposition) submitted a request to the OPECST for a study on the theme "from knowledge about genes to their use". But it was not until the autumn of 1997, when the GMO issue had become a source of political controversy, that the office actually began to work on this topic. Significantly, the subject was reduced in scope from genetic technologies in general to "the use of GMOs in agriculture and food". Jean-Yves Le Déaut, a socialist Member of Parliament, was appointed as rapporteur for this study. He conducted the GMO inquiry using the usual procedures of the Office, namely private auditions of experts and a two-day Public Audition held in May 1998. Over 200 people were auditioned between December 1997 and June 1998. The full transcripts of the Public Auditions were published (Le Déaut, 1998a). Experts consulted included scientists as well as representatives of industry, farming, consumer and environmental institutions. Most of

these consultations took place in France, but Le Déaut also travelled to Austria, Switzerland⁴ and the USA for this study.

In December 1997, Le Déaut was also charged with organising the consensus conference. This meant that it was in effect tagged-on as an additional procedure within the broader consultation exercise. It also meant that the conference was strongly marked by the personality of Le Déaut. President of the OPECST in 1998 and on several previous occasions, he had been a member and great advocate of the Office since its inception. He also proudly claims the credit for instigating Public Auditions as a method for technology assessment in France. The fact that the conference ended up being portrayed by the OPECST and the Government as an add-on to ongoing procedures reflected two important ambiguities. Firstly, the Office felt the need to defend the technology assessment methods it had used until then. Thus, they gave equal importance to all three procedures used and merged them into a single consultation exercise (private and public auditions of experts, and the consensus conference). Moreover, the auditions were used to frame the issues to be dealt with by the citizen panel. For example, in their letter to the "teachers" selected for the preparatory weekends, the steering committee listed the themes that should be addressed, "even if they seem to you unimportant or complex", pointing out that these had been established on the basis of the private auditions conducted by Le Déaut (OPECST, 1998b). Also, the list provided to the panel for their selection of experts to invite to the conference was to be drawn from the list of experts auditioned by Le Déaut.

Secondly, the Office is an inherent part of the parliamentary political system and its members are, by definition, committed to a representative model of democracy. This was, indeed, one of the main reasons why they, and the Government, rejected a first proposal for a consensus conference on GMOs a few months earlier (Assouline and Joly, 1997; Joly, 2000). They felt threatened by this spectre of direct democracy and made it clear that the citizens would be listened to, but that the members of the Office, as elected representatives, would remain the only actors who could legitimately give advice to government. Throughout their eight page document announcing the conference (OPECST, 1998a), they repeatedly stressed that the panel was not representative of the French population, and that the conference was no substitute for political decision making. The dominant view of the conference was of a one-way process of education from experts to citizens. The emphasis was on how the conference would facilitate public understanding of biotechnologies, and the OPECST stressed the role of the consensus conference as a catalyst for a broader debate, relayed by the press, which would enlighten public opinion (Table 2). There was no mention of any impact on decision making. Only one sentence in this document referred to any effect of the conference on policy makers:

Consensus conferences should contribute to make political decision-makers aware of the importance and complexities of some decisions that they have to make. (p. 3).

Furthermore, there was absolutely no reference to the fact that the scientific experts might themselves, by participat-

Table 2: OPECST view of the conference

As soon as one considers totally new subjects such as the emergence of transgenic plants, the advice of experts, which often increases the perplexity of political or economic decision-makers, can only constitute one element of the debate. In this case, the debate is indeed far more complex since one needs to establish new social norms and to facilitate the understanding, by the public, of the stakes involved in the technological debate. Knowledge about the limits of the social acceptability of innovations are today an essential criterion that one can no longer escape, but the problem which remains is how to manage to generate a debate that can enlighten public opinion. Consensus conferences cannot in themselves resolve this dilemma, since the opinion of fifteen citizens cannot be a substitute to public debate; they can, however serve to initiate this debate and to launch in on a sound basis (...) It is therefore via the public debate that these conferences can become part of the decision-making procedures. They do not, indeed, aim to establish a direct pseudo-democracy where the will of public opinion would become a substitute for political decision-making. One must not forget that, sometimes, great scientific and technological advances were made despite very intense reactions of public opinion. (...) In a representative democracy, politicians often have to play the role of an enlightened leader with respect to the rest of the population, but they still need to be themselves enlightened about the real consequences of the choices they have to make. Consensus conferences and the public debate which should follow must indeed contribute to make these politicians aware of the importance and the complexity of some of the decisions they have to make.

(OPECST, 1998a: 1-3)

ing in this conference, reconsider their opinions, their roles and the scientific framing of their advice in risk regulation processes. This possibility is considered by a number of social science researchers to be one of the most important and potentially beneficial functions of public participation in risk management and technological assessment (ESRC, 1999; Levidow, 1998; Marris, 1999; Purdue, 1995; Stirling, 1999; Wynne, 1987). Indeed, these authors argue that public participation should aim to help elicit the narrow framing of risk tacitly used by scientific experts, including the often-inadequate treatment of uncertainty, and to challenge the implicit social and ethical dimensions incorporated into their evaluations.

Over the period during which the conference was organised (January-June 1998), a distinction was increasingly made by Le Déaut and the steering committee between the consensus conference itself and the public debate as a larger process, even though in the Government statements of November 1997 the two were clearly synonymous. One of the members of the steering committee insisted on this point in his post-conference evaluation:

The Government had announced a 'big national public debate'. Of course, the debate that we were organising was not this big debate. So what was the idea? To initiate the debate? Of course not, since it was already initiated. But could one be sure that it had been well initiated? That all the important points had

already been established? That the public debate, as it was occurring, was not manipulated by pressure groups of whatever kind? The idea was therefore not to directly organise the 'big national debate' announced by the Government, but to establish the conditions for a mini-debate (the one we were organising) that would take place independently and would bring out the points to be discussed and that in this way the general public debate would be reoriented, without allowing this reorientation to be manipulated by anybody. And especially not by the organisers of this mini-debate, that is by us. (Roqueplo, 1998: 6-7)

The steering committee also insisted on the "increasingly passionate" dimension of the existing GMO debate and suggested that it was necessary to better understand the "deep feelings of the population" (OPECST, 1998a: 4). The aim was therefore to exclude views considered to be "extreme", and to recruit "average" citizens which would by definition (and selection) not have any personal interest in the development, or not, of GMOs. The existing debate was seen to be biased and not representative of the sentiments of "real" French citizens. In this way, the consensus conference aimed to reorient the debate away from established and vocal stakeholders:

One point in particular must be stressed: in order to prepare a public debate which is not confiscated from the start by one side or the other, the procedure that we are experimenting begins by snatching the debate away from its usual protagonists" (OPECST, 1988b).

Although such statements referred in principle to all different stakeholders, it seems that the main target was anti-GMO non-governmental organisations.

It was felt that these NGOs had succeeded in getting their negative evaluation of these technologies widely taken up by the media, to the detriment of more positive views.

The steering committee seemed extremely worried that the consensus conference would somehow be manipulated by established stakeholders. As a result, they introduced several minor modifications to the model prescribed by the Danish Board of Technology. All of these aimed to increase their control over the operations. Firstly, no stakeholders were invited to join the steering committee. Instead, it was composed of the four scientists already involved as advisors to Le Déaut for his broader inquiry (three biologists and one researcher in law and science), complemented by three social science researchers with an interest in relations between science and society. Thus, the running of this public participatory process was left entirely to formal experts. Secondly, no hearing of interested parties was held, which is something that is also advised by the DBT and which might have compensated to some extent for their absence on the steering committee. Thirdly, recruitment of the panel was conducted by a marketing agency, rather than by voluntary applications following advertisements in the press. The committee felt that using the press "would surely have produced submarines manipulated by the diverse pressure groups interested in GMOs" (Roqueplo, 1998: 6). Apart from these modifications, the procedures described in the DBT "rulebook" were followed very closely (e.g. DBT, 1999; Joss and Durant, 1995).

The first two modifications introduced by the steering committee, and

the sentiment expressed by the third, had a major impact on the way in which environmental and consumer NGOs perceived the consensus conference. It created a generalised feeling of suspicion and antagonism among these organisations, which was exacerbated by the lack of communication by the OPECST during the whole preparatory phase. The atmosphere of confidentiality surrounding the conference was also commented upon by journalists and social science researchers interested in studying the process (e.g. Fernandes, 1998). At first Le Déaut planned to keep secret the names of the members of the steering committee and of the teachers, in order to protect them from external pressure. In the end, following pressure from environmental NGOs (*Agir pour l'Environnement*, 1998), the list of committee members was published, and press releases containing the names of the teachers were published following each of the two preparatory weekends. In addition, all the training sessions and the final public conference were videotaped, but only made available after completion of the conference. Furthermore, despite several proposals by different groups of social science researchers, and the fact that the experimental nature of this conference was frequently stressed by the organisers, the Office refused to set up an official evaluation of the conference. The videotapes do not on their own enable a detailed analysis of the process, such as that conducted by Joss (1995) or Mayer *et al.* (1996). Apart from the presentation document published by the OPECST around March 1998 (OPECST, 1998a), the verbatim citizen panel report, and two brief and factual (undated) press releases published

following each of the two preparatory weekends, no other public documents were produced by the OPECST about the conference. Commentaries have however been published by social scientist members of the steering committee (Boy, 1999; Roqueplo, 1998).

Reactions by Non-governmental Organisations

Feeling that they were being specifically excluded, several key environmental NGOs did not trust the process and refused to participate in the process (e.g. Ecoropa, 1998). The main critiques emanating from NGOs were as follows:

1. The procedure was not democratic enough: 15 citizens could not represent the whole of the French population. This was exacerbated by suspicions about the role of the market research agency in the recruitment of the panel, and the lack of any information about the criteria that would be used. A referendum was often proposed as a more democratic alternative.
2. The majority of the persons involved in the organisation of the conference were felt to be either pro-biotechnology and/or involved in the development of GMOs. This included the OPECST, Le Déaut, the members of the steering committee and the teachers.
3. Regardless of who provided the information provided during the preparatory week-ends, it could never be considered to be neutral. A better alternative would be to present conflicting information provided by different stakeholders.
4. NGOs were being purposefully ex-

cluded from the process.

5. The panel would not be aware of some of the NGOs which were very active with regard to GMOs, due to their small size and lack of public visibility. The panel should be provided with information about these groups, otherwise they would only invite large organisations such as Greenpeace and the National Consumers' Union.

Ironically perhaps, these non-governmental organisations were, just like the organisers, also concerned about the potential manipulation of the panel members by people with interests to defend. But in their case they were concerned about the undue influence of pro-GMO individuals. Thus, neither the organising committee nor the NGOs seemed prepared to recognise the inherent common sense of "ordinary citizens" and their ability to participate actively in the process of technology assessment. Both were proved wrong. From the start, during the preparatory weekends, as well as the final conference, the members of the panel demonstrated that they were willing and able to take an active role in the process, interrupting their "teachers" and the experts and making them return to the points which they considered important. This seemed to have surprised all observers, including the organisers (Roqueplo, 1998: 10) and owed them newspaper headlines such as: "Citizens discourteous in the face of specialists" (*Libération*, 22nd June 1998). Yet a look at consensus conferences conducted previously in other countries would have demonstrated that this is a usual outcome. Members of these panels have always tended to take their responsibilities very seriously, work hard, and are themselves extremely wary of

not being – or being seen to be – manipulated by stakeholders from any side⁵.

Another common misconception among virtually all French stakeholders prior to the conference was that the citizens would deliver a clear for-or-against verdict on the use of GMOs. Industry and some Government members feared this, and anti-GMO non-governmental organisations hoped for it. Yet again, a look at previous consensus conferences would have revealed that the typical outcome is, just as it turned out to be in France, a considered analysis of the conditions under which the panel members feel the technology should be developed and controlled in order to maximise the potential societal benefits and minimise potential harmful impacts. Thus, rather than announcing any verdict on specific technological products, panel reports tend to focus instead on institutional arrangements surrounding their development. This, indeed, is consistent with the sociological analysis of public perceptions of environmental and technological risks developed by Brian Wynne and colleagues (Grove-White *et al.*, 1997; Marris, 2000b; Wynne, 1987).

These misconceptions about the nature of consensus conferences were probably due to the novel nature of this experience in France. They were, however, exacerbated by the fact that the organisers chose not to consult any persons abroad who had direct experience of consensus conferences, and not to read any reports produced by previous conference panels. This decision was again based on the organisers' notion of independence: they felt that such consultations would influence them untowardly.

Reactions of Industry

There is no major agricultural biotechnology industry in France (Joly and Nesta, 1999). The two most significant biotechnology firms are Rhone-Poulenc and Limagrain. Rhone-Poulenc is primarily an agro-chemical and pharmaceutical company, and has, at least until recently, showed relatively little interest in agricultural biotechnologies. Limagrain, on the other hand, is primarily a seed company, and has over the last 15 or so years invested heavily in plant biotechnology. But compared to major foreign firms in the world, and especially in the USA, it is a rather small player. Large multinationals such as Monsanto and Novartis have, of course, branches in France. Indeed the headquarters of the Novartis section for arable crops is located near Toulouse. Since this section was very closely involved with the development and promotion of the genetically modified Bt maize at the centre of the GMO controversy in France, it was in principle a major interested party.

As a whole, representatives from industry had not actively participated in the public debate on GMOs before the conference. Novartis was an exception, but their participation in the debate was rather forced upon them. The controversy about their Bt176 maize heightened throughout 1996–1998, cumulating in a direct action by members of the *Confédération Paysannes*, a left-wing farmers' trade union, to destroy seeds in their warehouses in January 1997. When the conflict escalated, they explicitly decided to withdraw from any direct communication with the public, and focused instead on behind the scene lobbying activities with other major stakeholders

in the food chain. When the public debate on GMOs emerged during 1997 and 1998, Novartis and other industry representatives in France privately complained that American biotechnology companies, and especially Monsanto, had misjudged the political and cultural climate in Europe and had inflamed the situation with their attempts at soothing communication campaigns. A major publicity campaign was carried out by Monsanto in all major newspapers and weeklies during the spring of 1998. Although this campaign had been planned before the consensus conference was announced, the coincidence was commented upon negatively by many stakeholders.

Industry stakeholders were not given any better access to the conference process than any other actors, but were happy with this since it enabled them to show that they had not influenced the conference in any way. As a whole, therefore, they kept a low profile and simply responded to requests by the OPECST to provide experts for the final weekend. Novartis, Monsanto, Rhone-Poulenc and Limagrain were represented in the expert panels. Thus, all of these firms were happy to delegate responsibility for the public debate on GMOs to the government and the OPECST. On the other hand, they did follow very closely, and with some trepidation, the final conference itself, and appeared very relieved when the panel did not take a stronger line for a moratorium.

The behaviour of the agro-food industry was similar (Joly, 2000). Danone and Nestlé both provided experts. Danone is a French company that ranks within the three largest food production companies in the world. During the conference,

they essentially took the line that they were caught between, on the one hand, biotechnology companies pushing GM products onto them, and on the other, consumers who did not wish to buy them. They argued that the best solution was labelling, and asked for clarification of regulations in this respect. Food distributors took a similar but stronger line. They also argued that GM products were being imposed on them from actors upstream in the food chain. But some of them also emphasised that they would do everything in their power to make sure that consumers were provided with a real choice of products containing no GM ingredients, regardless of the legislation. This was particularly the case for Carrefour, which is the largest European food distributor, and one of the largest in the world. It also, significantly, produces its own-brand products.

Citizen Panel Recommendations

After questioning a total of 27 invited experts, the panel retired and spent 20 hours (over-night) drafting their report, which was presented at a press conference on 22nd June. It was summarised as a "yes but" by many observers. Thus, the development of GMOs was not opposed per se, but the panel made a number of recommendations about accompanying measures. They requested, in particular:

1. "Clear, reliable and accountable" labelling policy, including the separation and traceability of GM and non-GM products throughout the food chain.
2. The participation of representatives of society in the regulatory system.
3. New laws to ensure liability and re-

sponsibility in case of harm detected in the future.

4. Greater investment in public sector research on the ecological risks associated with GMOs.
5. Greater state funding for public research in general.
6. More specifically, the panel requested that antibiotic marker genes should not be used for the construction of genetically modified plants.

The citizens' report also stated that "until these conditions are satisfied, part of the panel believes that a moratorium would be advisable". As discussed above, this kind of statement is rather unusual for a consensus conference panel. It was probably encouraged by the fact that several participants at the conference (scientists as well as representatives from the Green party, NGOs and the *Confédération Paysannes*) urged the panel to recommend such a moratorium. Furthermore, this quote is often partially cited by anti-GMO activists, without the first part of the sentence which qualifies the statement and puts the focus on the institutional arrangements recommended by the panel.

Most of these points about the social management of technology were not new. They were very similar to the Government announcement of November 1997, and cover the main questions raised by the public debate in 1996–1997. One exception is the issue of liability and responsibility, which had not carried much weight in the debate. The absence of recommendations about patenting is noteworthy. This issue, which had been central to the debate about GMOs in many countries, was not focused upon during the conference. It only entered the public debate in France during the

summer of 1998, prompted by the signature of the European Patent Directive and stories about "Terminator" technology. One can also note the absence of any blanket rejection based on ethical considerations, and of any take-up by the panel of the argument "we need GMOs to feed the (third) world", promoted by many biotechnology firms. Indeed the panel stressed their perception of the "gap between the public relations discourse of these firms and reality", which they described as: "Multinational companies take advantage of their dominant position to offer farmers technologies which could in the long term lead to into financial dependency". Overall, however, the panel remained within a very liberal frame: the final outcome is to be regulated through the market and relies on individual choice and responsibility. The State is portrayed as a key arbitrator, providing scientific expertise and legislation to protect consumers and citizens against the excesses of private firms.

Le Déaut's Report

Le Déaut submitted his report to the OPECST on 30th June 1998, and it was adopted unanimously (Le Déaut, 1998b). His position was that the use of GMOs should be authorised, but that measures should be taken to improve risk evaluation procedures and information for the consumer. In this respect, he broadly supported most of the recommendations of the citizen panel. He stressed that he had, through the consensus conference, consulted "ordinary French people" as well as experts. Some stakeholders have expressed doubts about the extent to which Le Déaut's opinion could

have been influenced by the citizen panel, since his report, based on 8 months of consultation with experts, was completed just 6 days after the panel had submitted their recommendations. The citizen panel's report was, however, included as an annex to Le Déaut's report, and he referred to it frequently, pointing out where he felt that his views were supported by the panel, and defending his own opinion when it was clearly contrary to that of the panel. His recommendations went directly against the panel's report on only two points. First, he made a distinction between antibiotic resistance marker genes which incorporate a bacterial or a eucaryotic promoter sequence⁶. He recommended that the first be banned, but that the second be evaluated on a case-by-case basis. Second, Le Déaut differed from the panel with regard to the nature of the institutional relationship between expert and citizen evaluations of GMO authorisations. Although he agreed that greater representation from representatives of society should be included in the evaluation process, he argued that any "citizen commission" should be clearly distinct from the existing expert-based Commission du Génie Biomoléculaire (CGB). The panel had, in contrast, recommended two sub-committees within the CGB.

Government GMO Policy Following the Conference

On 30th July 1998, the Government announced its position "based on these [OPECST] initiatives" (Prime Minister's Office, 1998). Government policy would be based on three key principles: "strict application of the precautionary principle; a necessary vigilance for the large-

scale use of GMOs; and increased transparency for consumers and citizens". Specific decisions or engagements were as follows:

1. Some genetically modified crops were considered to be more acceptable than others, mostly based on a judgment about their propensity to transfer their genes to surrounding wild plants. On this basis, genetically modified maize would be authorised but not GM oilseed rape or sugar beet. Thus:
 - i. The commercialisation of two new lines of GM maize would be authorised⁷.
 - ii. A two-year moratorium would be applied on the marketing and the cultivation of GM plants "such as oilseed rape, which present a risk of crossing with other species".
 - iii. GM plants containing antibiotic resistant genes would be considered on a case-by-case basis. Despite the concern expressed by the citizen panel, the risk was considered to be minor, especially compared to the increase in antibiotic resistance caused by the use of antibiotics in human and veterinary medicine, and in animal feed.
2. Measures would be taken to ensure "transparent and pertinent" information for consumers. This included a commitment to the labelling of GM food products and to setting up a national system for the traceability of GM plants.
3. Biovigilance would be reinforced, and the risk evaluation procedures for GMOs would be reformed in order to increase transparency.

These positions were essentially the

same as those announced by the Government in November 1997. High-ranking civil servants stated in our interviews that the Government felt that their position had been backed up by the citizen panel. For them, the similitude in policy between November 1997 and July 1998 should not be taken to reflect any lack of influence of the consensus conference. Our interpretation of events is that rather innovative decisions – which signalled a change from public GMO policy prior to 1997 – were taken by the Government in November 1997, and that the consensus conference confirmed that these decisions were in line with citizen expectations. Thus, the Government responded to the conference by reinforcing its existing policy along the same lines. In terms of labelling and traceability they even went further than they had before. Furthermore, the French Government decided to defend these controversial positions in international trade negotiations within the EU and with the USA. Most spectacularly, in June 1999, the French delegation at the European Council of Ministers called for – and in effect obtained – the suspension of further authorisations for the commercialisation of genetically modified crops and foods in the EU (Marris, 2000a). The French Government also defended this position during negotiations to establish EU policy prior to the WTO meeting in Seattle in November 1999. In doing so, the Government was well aware that it was jeopardising both the construction of the EU as a unified political and economic union, as well as relations between the EU and its trade partners, especially the USA. The main arguments used by the French Government to support a freeze on GMOs re-

lated to the inadequacy of labelling and traceability rules; the need to establish a tighter and more transparent risk assessment framework; and also simply the "need to restore public and market confidence" (Council of Ministers, 1999). The precautionary principle has also frequently and increasingly been stated as prescriptive guidance (e.g. Kourilsky and Viney, 1999). The more recent French decisions regarding the non-lifting of the ban on British beef represents an extension and hardening of this policy to other environmental and health risks.

At home, however, nothing much has visibly changed, so far, in the institutional arrangements for the evaluation and management of GMOs since the consensus conference. Furthermore, Government support for research in agricultural biotechnology has not been altered, and has continued to promote closer links between the private and public sector. For example the establishment of Génoplante, a major public-private joint venture in the field of plant biotechnology has gone ahead despite significant criticism from public sector scientists.

The strong statements with regard to setting up a system of traceability for genetically modified food products, made in November 1997 and developed further in July 1998, have not yet been implemented. Follow-up so far has consisted mostly of – substantial – expert feasibility studies about the technical procedures that would need to be established and their economic cost. In addition, the Secretary of State for Consumer Affairs was, in March 1999, assigned by the Prime Minister the task of developing a labelling and traceability system which would reflect the demands of the

panel. Longer term evolutions can therefore be anticipated.

The second main pledge by the Government was about the organisation of scientific expertise, and in particular about increasing the transparency of the regulatory system. A major reform of the *Commission du Génie Biomoléculaire* has been discussed since the autumn of 1997. The aim would be to increase the participation of representatives of civil society and to make its activities more transparent, and this was clearly supported by the citizen panel. The membership of this committee was renewed in June 1998 (prior to the conference), following usual administrative procedures. The new members did represent a broader range of scientific experts, and the comitology rules of the CGB have changed significantly. But no major reform has yet been undertaken to increase public participation, although this is still being discussed in political circles. The biovigilance committee continues to exist, and was more permanently inscribed in legislation in July 1999. But since next to no GM crops are, or have been, cultivated in France its work has inevitably been limited. On the other hand, GMOs have continued to be cultivated in the context of experimental releases and large-scale farm trials. And despite repeated Government declarations about improving transparency and unrelenting requests from environmental NGOs, access to information about these releases (including their precise locations) remains severely restricted.

Substantial new public research funds have however been made available for the evaluation of the impacts of the cultivation of GMOs. Significantly, the stud-

ies commissioned include potential effects which were previously deemed acceptable or irrelevant when genetically modified crops were granted approval (Levidow *et al.*, 1996, 1997, 1999 and 2000; Roy, 2000; Roy and Joly 2000). In particular, indirect impacts are explicitly taken into account, such as modifications induced by GMOs on farming practices and on the whole agro-food sector. So are cumulative effects such as the impact of multiple gene insertions within the same GM crop, or of the use of several different GM crop varieties within a farming system over several years. The possible effect of the genetic modification process itself on the structural and functional stability of genomes are also emphasised. Furthermore, the impacts to be investigated include not only health and environmental risks but also social and economic consequences (MENRT, 1999).

It is very difficult to measure the precise extent of the influence of the consensus conference on public policy, especially since the Government never explicitly responded to the citizens' report. One should take care, however, to distinguish between immediate and longer term impacts. Although Government decisions taken weeks after the conference did not distinctly follow-up on the panel's recommendations, public policy developments in France since July 1998 do seem broadly consistent with the citizen's requests. And so do important ongoing initiatives. When analysing the impact of the conference, one should therefore not focus solely on immediate and direct consequences. The conference is best seen as one element in more complex and long term decisional processes. We conclude that the conference

consolidated the policy line which was emerging from the new left-green Government prior to the conference. The foundations of all the – rather innovative – developments in public policy on GMOs described above were apparent, at least in our interviews, prior to the consensus conference. This does not, however, imply that the conference had no effect. It provided important added legitimacy for these prior initiatives which were not universally accepted within government beforehand.

Furthermore, the fact that the conference actually happened, regardless of any direct effect of the citizens' recommendations, has been very significant. From November 1997, when the conference was announced, until June 1998, when the process was completed, a very high level of uncertainty prevailed. Public policy on GMOs was essentially on hold and stakeholders felt that almost anything was possible. Industry feared that biotechnological developments might be restricted, whereas anti-GMO activists hoped that the panel would support their call for a moratorium. Media coverage on GMOs was high during this period and focused mostly on the pros and cons of the technology, and on the positions of different actors, rather than on the consensus conference itself (Lemarié and Joly, 2000). This provided an important space for all major stakeholders, including many who had not been involved in the debate before, to position themselves with regard to GMOs. Existing stakeholders were also forced to reappraise or explicit their positions. The nature of the network of institutions involved in the GMO debate was therefore radically modified. This was particularly true on the side of anti-

GMO activists: new non-governmental organisations emerged, and novel coalitions between existing ones were established. Industry actors, especially food distributors, also developed more explicit positions. INRA, the major national agricultural public research institution published, for the first time, a dossier on GMOs. These key developments in the public scene surrounding GMOs are likely to have long-lasting effects on the controversy which go far beyond the consensus conference itself.

Discussion

This case study has revealed an inherent tension within all attempts at increasing citizen participation in public decision-making within post-modern societies. On the one hand, on the side of the French government and parliament, there is a sincere political will to consult citizens and insert them more directly in public decision-making. This shift is largely due, as in other western democracies, to the observed "democratic deficit", i.e. the fact that citizens increasingly feel that they are not well represented by their public institutions. This is despite the fact that there are in fact more and more institutions devoted to public wellbeing at the international, national, regional and local levels. France has itself been through significant reforms over the last decade to decentralise public institutions. In this context, the citizen's conference did represent a deliberate experimental innovation for a new form of "bottom-up" governance. On the other hand, French administrative practice is inherently "top-down", and remained so during this exercise. Thus, the way in which citizens

were consulted was, paradoxically, entirely consistent with the top-down republican State view of governance, founded on electoral legitimacy. The State, embodied by the OPECST and in particular by Deputy Le Déaut, was, throughout the exercise, the only legitimate representative of the people.

Within French political culture, the concept of the State is something much wider, and indeed distinct from, parliament or government. The State is non-partisan, objective and, by definition, serves the public good. It is 'of the people', but also 'above the people'. Thus, although citizens may disagree – indeed are expected to disagree – on important societal topics, it is entirely legitimate for the State to settle an important political issue by taking a unilateral decision. This will not usually be challenged by the French population. In this way, the State in effect establishes societal consensus. Indeed the OPECST emphasises the non-partisan and consensual nature of its decisions: "It is important to note that decisions by the Office are almost always taken unanimously, the Office being characterised by the consensual character of its positions" (OPECST, 2000).

This is particularly ironic because, despite the antagonism which developed between the promoters of the conference and some environmental NGOs, there was one point on which all stakeholders and observers agreed: in France, the procedure could under no circumstances be called a "consensus conference", because this would imply a heavy-handed manipulation of the process. The French conference was therefore called a "Citizens' Conference" ("conférence de citoyens"). The organisers failed to notice that even in Denmark,

where the name was coined, these conferences do not require that the panels necessarily arrive at a consensus. The Danish Board of Technology guidelines state that: "The preparation of the final document is a process in which, through an open discussion, an effort is made to attain the widest consensus between the laymen on the initiatives and actions to be recommended. Minority opinions should only be allowed where the process reveals very wide differences of opinion" (DBT, 1999, p.5). According to the facilitator for the French consensus conference panel, the instructions given to the French panel were in effect identical to those proposed by the DBT.

Asking the members of the panel to come to a consensus was considered to be contrary to republican ideals of equality and freedom. This reflected the fact that the French republican model of democracy is based upon the idea of debate between citizens with equal rights. The belief that people are free to choose and think what they want is primordial. In France, self-identity is generally constructed on the basis of intellectual and discursive differentiation between individuals, even though this does not necessarily reflect substantive differences. It was therefore assumed that the panel would debate without agreeing. Indeed the French term used was "débat contradictoire", which emphasises underlying conflict. In this context, it was necessary to invoke the State. The essential role of the State would be to establish the nature of the disagreements. It would be a neutral actor, providing information and organisational action. Citizens could and should participate in a "débat contradictoire" but the State, which is by definition supposed to serve

the interests of citizens in an impartial manner, would then be entitled to settle the question.

This explains why it was so important for those involved to emphasise the separation between State, as an impartial actor, and government, a partial one. It also explains the decision to exclude organised stakeholders from the process itself, since these were considered to be too partisan. University professors and public sector researchers, as State servants, were on the other hand legitimate candidates as teachers for the preparatory weekends and as members of the steering committee. Therefore, although the idea of consensus was considered to be abhorrent, in practice rival discourses were explicitly excluded from the underlying process. The State remained, throughout this experiment in public participation in technology assessment, the only actor which could legitimately advise government.

With respect to the conference, and as President of the OPECST, Le Déaut was considered to be a representative of this impartial State. Within French republican culture the fact that he was also a Member of Parliament from the political party in power was perfectly acceptable. It was as a State servant that he could legitimately synthesise the panel's arguments and integrate them within his broader OPECST inquiry. Through him, the State consulted and listened to the opinions of citizens and representatives of civil society. But rather than transferring these directly to decision-makers, Le Déaut took on a central role as a neutral intermediary, synthesising these opinions and presenting them to parliament. It was then up to government, through its elected representatives, to

decide on the course of action. This rather top-down vision of the procedure was shared by most participants, including the citizen panel itself. It was only challenged by a small number of environmental NGOs, and then only because the organisers were not seen as impartial enough, and therefore not exemplary representatives of the State. The NGOs criticised the conference on the grounds that the citizens would be influenced by the personal and institutional interests of the organisers and teachers involved in the preparatory sessions. They argued that they, as stakeholders, should be more closely involved in order to establish a more balanced view of contradictory arguments. They did not, in contrast, focus on the idea that citizens should be better enabled to frame the issues as they pleased.

A similar observation can be made about the recently established *Commission Nationale du Débat Public*. This institution was created in 1997 in response to increasingly difficult to resolve controversies between local residents and state engineers with regard to major infrastructure projects such as roads, railway lines, waterways and dams. It aims to stimulate local public debate. But the commission is national and mostly composed of representatives of top-down rather than bottom-up institutions. Only two NGOs (one consumer and one environmental) are represented, and both are national organisations rather close to the State. The other members are all from technocratic and public institutions such as senior judges, elected Mayors, members of parliament, and the national railway company. This Commission is therefore structured around national institutions, and yet it decides

when, where and how a local debate should take place (Blatrix, 1997).

This republican concept of an impartial State also, interestingly, fits in well with a particular view of technology assessment which is not specifically French. According to this view, there is objective, neutral information about science and technology on one hand, and partisan, biased opinion on the other. Thus science, just like the State, has a "natural" authority founded on its impartiality. This view, which is shared by the OPECST, led to a particular frame for the consensus conference. French public institutions are permeated by technocratic members of the grand corps and this obviously influences their dominant view of science and technology. For example, the way in which the preparatory weekends were conceived implied that there existed an objective view of biotechnology which could be transferred neutrally to citizens, via State servants, i.e. "disinterested scientists" such as university professors and public sector scientists. These information sessions were considered by the organisers to be of an entirely different nature from the conference itself, were "real debate", involving controversies and partisan positions, would occur.

The French conference was also framed by the associated notion that there can be a neat separation between public and private sector science. According to this notion, public science is "pure" and "neutral" and serves the public good. Privately funded research, on the other hand, is considered to be by definition biased and serving commercial interests to the detriment of societal benefits. The vision was strongly supported by the public sector scientists

who participated in the preparatory sessions and the conference itself; and it was readily taken up by the panel, who recommended that more State funding be devoted to biotechnology research in order to "guarantee its independence with regard to private sector research and the influence of multinationals". It was also taken for granted that risk assessments should only be carried out by public institutions. Indeed at times during the conference debate this seemed to be the only legitimate role for public science, which would in this way serve as a safeguard against the excesses of private science. The idea that public sector scientists should, or indeed do, contribute to technological advances was largely absent. This was despite the fact that previous and ongoing governmental policy was pushing public sector scientists to collaborate more extensively with the private sector, in particular within the field of biotechnology (Joly and Nesta, 1999). The French public sector for scientific research has until now remained, in comparison to trends in other countries, relatively large and isolated from the private sector. It seems that some public sector scientists used the opportunity created by this conference to fight against such trends, and sought to reestablish the importance of independent research conducted by public scientific institutions. In addition the panel also gladly embraced the notion "retard technologique", which is a key feature in French debates on technological development. The argument is that France needs to accelerate the promotion of R&D in order to keep up or catch up with foreign competitors, especially the USA; otherwise France will lose its independence and will suffer

detrimental economical consequences.

This vision of two distinct types of science also excludes the more fundamental idea that there is such a thing as scientific culture which permeates both private and public sector scientific institutions and which, through technological developments, influences wider societal processes. This institutional and cultural framing set important limits on the French consensus conference, in particular with respect to the extent to which the notion of technological progress in itself could be challenged. There was little or no scope within the conference process to challenge, or even discuss, the meaning of scientific and technological development and its relationship with social and cultural processes. Thus, although the French institutional and cultural context is significantly different from the UK context, one can say, following Levidow (1998) that the Citizen Conference served to "technologize democracy" rather than to "democratize technology". Interestingly, this critique was not mentioned in France, even by environmental NGOs who opposed the conference. Only one small group of activists with seemingly anarchist leanings developed this argument to some extent, and coined the term "genetically modified democracy" (Anon, 1998). But, despite some very visible direct actions, this group was unanimously rejected by all other stakeholders and their discourse has found absolutely no space in the French public debate.

One must, however, remember that this was a first experiment and that the organisation of a consensus conference did reflect a broader ongoing evolution in French institutions, especially with regard to public input into decisions on

technological and environmental issues (Blatrix, 1997; Joly *et al.* 1999; Lascoumes, 1997; Ministry for the Environment, 1999; Piechaczyk, 1997). Institutional cultures do not change overnight, but can evolve over time. Indeed it seems clear that the persons who learnt the most from this process, and who found their own prior judgments most challenged, were not so much the citizens but the experts and politicians; i.e. members of the steering committee, the expert panels and relevant ministries.

We have conducted focus group research which reveals that members of the general public were essentially unaware of the conference (Joly, 2000; Marris, 2000b). Although, overall, they tended to think it was a good idea when they were told about it, they felt that the fact that they had not known about it revealed that it did not represent a sincere desire for a real debate with society. It would probably take many repetitions before such a process was considered to be significant by the French population. But it does seem likely that, given ongoing societal developments with regard to risk and the democratic deficit, experiments of this kind will be repeated. Citizens are therefore, in effect, forcing top-down political structures to reform. One can therefore envisage in the longer-term a converging co-evolution between the institutions involved and members of the general population which would lead toward more effective and challenging public participation in technology assessment.

Acknowledgements

This research was funded by the European Commission (Contract N° FAIR-CTC98-3844) and the French Ministry of agriculture (Convention CM 97.15). The contribution of G rald Assouline and Juliette Lemari  is gratefully acknowledged. We would also like to thank Les Levidow and Bernhard Nievergelt for comments on a previous draft. In addition, we are delighted to acknowledge the invaluable cooperation of the numerous organisations and individuals involved in the GMO debate in France who agreed to be interviewed. They are too numerous to mention here but we thank them all. Claire Marris wishes to express her debt to Michalis Lianos for his always-stimulating collaboration which allowed her to develop many of the arguments presented here. Any errors remain, of course, the entire responsibility of the authors.

Notes

- 1 In Switzerland, a first experimental consensus conference was held on electricity production in 1998, largely because GMOs were considered to be a topic that was too sensitive for public consultation, but this was followed by one of GM food in 1999. Similarly, it was suggested that the first Austrian conference should be on GMOs, but this was considered too difficult for a first experiment and ozone pollution was chosen instead (Helge Torgersen, personal communication).
- 2 Consensus Conferences in Denmark: Gene technology in industry and agriculture (1987); food irradiation (1989); human genome mapping (1989); air pollution (1990); educational technology (1991); transgenic animals (1992); future of private automobiles (1993); infertility (1993); electronic identity cards (1994); information technology in transport (1994); integrated production in agriculture (1995); setting limits on chemicals in food and the environment (1995); gene therapy (1995); consumption and the environ-

ment (1997); teleworking (1997); citizens' food policy (1998); future of fishing (1998); genetically modified foods (1999). Source: The Loka Institute (<http://www.loka.org/pages/worldpanels.html>).

- 3 The notion of "grand corps" is an untranslatable feature of French technocratic governance, whereby engineers are trained at prestigious state engineering schools and remain loyally devoted throughout their career to their particular corps of alumni and its industrial sector (e.g. nuclear, civil infrastructure, forestry...). The best students usually obtain top managerial positions within the public and private sectors and as advisors to government.
- 4 A referendum on genetic technologies was held in Switzerland in May 1998, and Austria was at that time the most obstructive Member State in the EU with regard to facilitating the commercialisation of GMOs.
- 5 A similar situation developed during the UK consensus conference on GMOs in 1994, with NGOs publicly accusing the organisers of being part of the pro-GMO lobby, and stating that the panel was being manipulated and would not be able to come to develop its own opinion. As a result, in order to demonstrate their independence, the panel evicted all representatives of the steering committee, including their facilitator, from their deliberations during the production of the final report (Joss, 1995: 103-104).
- 6 In the first case, the gene can be more easily expressed in a pathogenic bacteria following gene transfer. Note that although the use of antibiotic resistance marker genes in the construction of transgenic plants has been central to the controversy on GMOs in France, this rather important technical distinction between the two types of has been entirely absent from public and expert debates. Le D aut (who is a biochemist), has been the only French actor to emphasise this distinction, but it was not taken up by the Government in their declarations on 30th July 1998. The Novartis Bt176 GM maize is unusual in

that it contains an entirely bacterial gene and it was this particular feature that worried the UK Advisory Committee on Novel Foods and Processes in 1994 when it raised an objection to the approval of this particular GM crop.

- 7 The "maize saga" was further complicated when, on 25th September 1998, the highest French administrative court (Conseil d' tat) supported appeals from several environmental NGOs and suspended the authorisation to cultivate Bt176 in France. The same NGOs have also appealed against the authorisations for commercialisation and cultivation of further maize lines and hybrids announced on 30th July and issued on 3rd August 1998. The court's ruling is still pending but given this uncertain legal context farmers chose not to plant any GM maize: only 74 hectares of GM maize were sown in France in 1999 (Marris, 2000a).

References

- Agir pour l'Environnement
1998 "Lettre aux signataires No.3, avril 1998". See also other documents at <http://www.globenet.org/ape/ogm>.
- Anon
1998 Leaflet distributed outside the press conference on 22nd June 1998, signed by an unknown "Association Contre la Technologie et son Monde" and reprinted in "Des Organismes G n tiquement Modifi s et du citoyen: notes sur la d mence technologique moderne et la mystification citoyenne", pamphlet signed by the equally unknown "Quelques ennemis du meilleur des mondes transg niques", Paris, January 1999 (p.9).
- Assouline, G.
1998 "D battons du d bat." Biofutur 171 (April): 7.
- Assouline, G. and Joly, P.-B.
1997 "Biotechnologies et soci t : les enjeux du d bat public." Biofutur 170 (September): 30-33.

- Barns, I.
1995 "Manufacturing consensus? Reflections on the UK National Consensus Conference on Plant Biotechnology." *Science as Culture*, 5(23): 200-218.
- Blatrix, C.
1997 "Laloi Barnier et le débat public: quelle place pour les associations?" *Ecologie et Politique*, 21: 77-92.
- Boy, D.
1999 *La Science en Procès*. Paris: Presses de la Renaissance.
- Commission of European Communities
1990 "Council Directive 90/220 on the deliberate release into the environment of genetically modified organisms." *Official Journal of European Communities*, L117, 8 May 1990, p. 15-27.
- Council of Ministers
1999 "Declaration by the Danish, Greek, French, Italian and Luxembourg delegation concerning the suspension of new GMO authorisations". Signed at the European Council meeting of Environment Ministers on 24-25 June 1999.
- Danish Board of Technology
1999 "Consensus conferences." Undated document (available at <http://www.tekno.dk>).
- Ecoropa
1998 "Invitation aux membres du Panel de la Conférence de Citoyens." Press Release issued on 25th May, 1998.
- ESRC
1999 "The Politics of GM food: risk, science and public trust." Global Environment Change Programme Special briefing no.5, University of Sussex (available at <http://www.gecko.ac.uk>).
- Fernandes, M.
1998 "Transgéniques: une conférence qui noie le maïs?" *Politique Santé*, 4 (June): 14-15.
- Fixal, J.
1997 "Consensus conferences as 'extended peer groups'." *Science and Public Policy*, 24(6): 366-376.
- Gotweiss
1998 *Governing Molecules: the Discursive Politics of Genetic Engineering in Europe and the United States*. Cambridge (MA): MIT Press.
- Grove-White R., Macnaghten, P., Mayer, S. and Wynne, B.
1997 "Uncertain world: GMOs, Food and Public Attitudes in Britain." Lancaster: CSEC, Lancaster University.
- Grundahl, J.
1995 "The Danish consensus conference model". Pp 31-40 in S. Joss and J. Durant (eds.), *Public Participation in Science: The Role of Consensus Conferences in Europe*. London: Science Museum.
- Joly, P.-B.
2000 "L'innovation controversée: Le débat public sur les OGM en France". Report to DGAL, INRA-SERD, Grenoble, France.
- Joly, P.-B. and Nesta, L.
1999 "Inventory and Analysis of Biotechnology Programmes and Related Activities in All Countries Participating in the EU Biotechnology Programme 1994-1998: National Report of France". Report to the European Commission, INRA-SERD, Grenoble.
- Joly, P.-B., Marris, C. Assouline, G. and Lemarié, J.
1999 "Quand les 'candides' évaluent les OGM... Nouveau modèle de 'démocratie technique' ou mise en scène du débat public?" *Annales des Mines* 14 (April): 12-21.
- Joss, S.
1995 "Evaluating consensus conferences: necessity or luxury?" Pp. 89-108 in S. Joss and J. Durant (eds.) *Public Participation in Science: The Role of Consensus Conferences in Europe*. London: Science Museum.
- 1998 "Danish consensus conferences as a model of participatory technology assessment: an impact study of consensus conferences on Danish Parliament and Danish public debate". *Science and Public Policy*, 25(1): 2-22.
- Joss, S. and Durant, J. (eds.)
1995 *Public Participation in Science: The Role of Consensus Conferences in Europe*. London: Science Museum.
- Kourilsky, P. and Viney, G.
1999 "Le principe de précaution: rapport au Premier Ministre" (available at <http://www.premier-ministre.gouv.fr/PM/291199.HTM>).
- Lascoumes, P.
1996 "Rendre gouvernable: de la 'traduction' au 'transcodage'. L'analyse des processus de changement dans les réseaux d'action publique". Paris: La gouvernabilité, CURAPP, PUF.
- 1997 "Information, consultation, expérimentation: les activités et les formes d'organisation au sein des forums hybrides". Pp. 14-54 in Séminaire du Programme Risques Collectifs et Situations de Crise, Actes de la huitième séance, 12 juin 1997. Grenoble: MRASH-CNRS.
- Le Déaut, J.-Y.
1998a "De la connaissance des gènes à leur utilisation. Première partie: L'utilisation des organismes génétiquement modifiés dans l'agriculture et dans l'alimentation. Tome II: Comptes rendus des auditions publiques". Paris: Office Parlementaire d'Evaluation des Choix Scientifiques et Technologiques.
- 1998b "De la connaissance des gènes à leur utilisation. Première partie: L'utilisation des organismes génétiquement modifiés dans l'agriculture et dans l'alimentation. Tome I: Conclusion du rapporteur". Paris: Office Parlementaire d'Evaluation des Choix Scientifiques et Technologiques.
- Legrand, P.
1998 "La charrue avant les bœufs". *Annales des Mines: Responsabilité et Environnement* 10 (April): 8-13.
- Lemarié, J. and Joly, P.-B.
2000 "Analyse de la couverture médiatique sur les OGM 1996-1998". Working paper, INRA-SERD, Grenoble.
- Levidow, L.
1998 "Democratizing technology – or technologizing democracy? Regulation agricultural biotechnology in Europe". *Technology in Society*, 20: 211-226.
- 1999 "What Science? UK controversy over genetically modified crops and food. In Miettinen, R. (ed.) *Biotechnology and Public Understanding of Science*. Proceedings of the UK-Nordic co-operative seminar, Helsinki, October 25-27, 1998. Helsinki: Edita, pp. 91-104.
- Levidow, L., Carr, S. and Wield, D.
1999 "Market-stage precautions: managing regulatory disharmonies for transgenic crops in Europe". *AgBioTechNet* 1: 1-8. (available at <http://www.agbiotech.net.com/reviews/april99/html/levidow.htm>)
- 2000 "Genetically modified crops in the European Union: regulatory conflicts as precautionary opportunities". *Journal of Risk Research*, special issue on GMO regulation in Europe. 3(?), special issue on "Precautionary Regulation: GM Crops in the EU" (forthcoming).
- Levidow, L., Carr, S., von Schomberg R. and Wield, D.
1996 "Regulating agricultural biotechnology in Europe: harmonisation difficulties, opportunities, dilemmas". *Science and Public Policy*, 23: 135-157 (special issue).
- Levidow, L., Carr, S., Wield, D. and von Schomberg, R.
1997 "European biotechnology regulation: framing the risk assessment of a herbicide-tolerant crop". *Science, Technology and Human Values* 22:472-505.
- Marris, C.
1999 "OGM: comment analyser les risques?" *Biofutur*, 195 (December): 44-47.
- 2000a "Swings and roundabouts: French public policy on GMOs 1996-1999". Guyancourt: Cahier du C3ED.
- 2000b "Final national report to the European Commission for the project 'Public Attitudes to Agricultural Biotechnologies in Europe'." Guyancourt: Rapport du C3ED (forthcoming).
- Mayer, I., de Vries, J., Geurts, J.,
1996 "Effects of participation: A quasi-experimental evaluation of a Consensus Conference on Human Genetics Research". Tilburg: Tilburg University Press.
- MENRT
1999 "Impacts des OGM". Call for research proposals from the Ministry for Education, Research and Technology, October 1999 (10MF allocated).
- Ministry of Agriculture
1997 "Conférence de presse sur les OGM: présentation introductive de Louis

- LePensec, Ministre de l'Agriculture et de la Pêche". Press release issued on 27 November 1997 (available at <http://www.agriculture.gouv.fr/>).
- Ministry for the Environment
1999 "Programme de recherche Concertation, Décision et Environnement: Présentation des résultats du 1er appel à proposition lancé en mars 1999." MATE: Paris, October 1999.
- OPECST
1998b Letter from steering committee to participants in the preparatory week-ends, dated 16th April 1998.
- 1998a "Conférence de Citoyens sur l'utilisation des organismes génétiquement modifiés (OGM) en agriculture et dans l'alimentation." Undated press pack to present the conference issued approximately March 1998.
- 2000 "Présentation de l'Office". Available at <http://www.senat.fr/opecst>.
- Piechaczyk, X.
1997 "Projet d'aménagement et projet démocratique". *Ecologie et Politique*, 21, 5-12.
- Prime Minister's Office
1997 "Les plantes génétiquement modifiées". Press release issued on 27th November.
- 1998 Press release issued on 30th July.
- Purdue, D.
1995 "Whose knowledge counts? 'experts', 'counter-experts' and the 'lay' public. *The Ecologist*, 25(5), 170-172.
- 1996 "Contested expertise: Plant biotechnology and social movements". *Science as Culture* 4: 526-545.
- Roqueplo, P.
1998 "'C'est une superbe leçon que nous ont administrée des citoyens rassemblés par le hasard des procédures': Un entretien avec Philippe Roqueplo à propos de la Conférence de citoyens sur l'utilisation des OGM." *Annales de Mines: Responsabilité et Environnement* 16 (October): 5-12.
- Røy, A.
2000 "Expertise et appropriation du risque. Essai à partir d'une étude de cas: la Commission du Génie Biomoléculaire." PhD thesis, Université Rouen, France (forthcoming).
- Roy, A. and Joly, P.-B.
2000 "France: broadening precautionary expertise?" *Journal of Risk Research*, special issue on GMO regulation in Europe. 3(?), special issue on "Precautionary Regulation: GM Crops in the EU" (forthcoming).
- Schumacher, G.
1998 Speech given by USDA Under-secretary Gus Schumacher to the International Grains Council in London on 17th June 1998.
- Stirling, A.
1999 "On science and precaution in the management of technological risk". Final Report of a project for the EC Forward Studies Unit. Brighton: SPRU, University of Sussex.
- Wynne, B.
1987 "Risk Management and Hazardous Waste: Implementation and the Dialectics of Credibility". London: Springer.
- Claire Marris
Centre d'Economie et d'Ethique pour l'Environnement et le Développement (C3ED),
Université de Versailles Saint-Quentin-en-Yvelines, Guyancourt, France.
- Pierre-Benoît Joly
Sociologie et Economie de la Recherche & Développement (SERD),
Institut National de la Recherche Agronomique (INRA),
Grenoble, France.